

Patent Claims

1. A method for production of an electrical connection from assemblies and modules to a current transmitter unit (1), which is provided with electrical contact elements (2) and with magnet bodies, and having a current receiver unit (3) which is provided with electrical mating contact elements (4) and with magnet bodies, which are arranged opposite one another, with opposite polarity to the magnet bodies in the current transmitter unit (1) wherein, for connection via an approximate guide (9, 10 or 11a, 11b respectively) in a first step, a mechanical connection is made, and an electrical contact is automatically made between the contact elements (2) and the mating contact elements (4) via the magnet bodies of the current transmitter unit (1) and the current receiver unit (3) by precision guidance in a second step.

2. The method as claimed in claim 1, characterized in that the current is supplied to the current transmitter unit (1) via a magnet slide (12) which is provided with electrical current supply contacts (13) and, after the first step is moved in the direction of the current receiver unit (3) after the first step with the mechanical connection by means of the magnet bodies (14) in the current receiver unit (3), thus making the electrical contact.

3. A connection apparatus for production of an electrical connection from modules or assemblies to a current transmitter unit (1) which is provided with electrical contact elements (2) and with magnet bodies, and having a current receiver unit (3) which is provided with electrical mating contact elements (4) and with magnet bodies, which are arranged with opposite polarity to the magnet bodies opposite one another, with the

current transmitter unit (1) being connected to the current receiver unit (3), with an approximate guide (9, 10 or 11a, 11b, respectively) being provided as a mechanical connection in order to make the connection, and fine guidance being provided for an electrical contact between the contact elements (2) and the mating contact elements (4) via the magnet bodies in the current transmitter unit (1) and those in the current receiver unit (3).

4. The connection apparatus as claimed in claim 3, characterized in that the contacts are in the form of flat contacts (2, 4) with flat contact points.

5. The connection apparatus as claimed in claim 4, characterized in that the flat contacts (2, 4) are arranged in an elastic wall (8) of the current transmitter unit (1) or of the current receiver unit (3).

6. The connection apparatus as claimed in claim 3 or 4, characterized in that the mechanical guide (9, 10 or 11a, 11b, respectively) is designed such that at the end of the mechanical insertion process, the magnet bodies in the current transmitter unit (1) and the magnet bodies in the current receiver unit (3) are arranged at least partially opposite one another.

7. The connection apparatus as claimed in claim 3, characterized in that the mechanical approximate guide has a side guide (11a, 11b) by means of which the current transmitter unit (1) can be positioned above the current receiver unit (3).

8. The connection apparatus as claimed in claim 7,

characterized in that the side guide is formed by dovetail guides (11a, 11b) in the current transmitter unit (1) and in the current receiver unit (3), with the dovetail guides (11a, 11b) being designed with oversize play.

9. The connection apparatus as claimed in claim 8, characterized in that the play is at least 1 mm, and is preferably 2 mm, at least in the direction of the current receiver unit (3) to be fitted.

10. The connection apparatus as claimed in claim 3, characterized in that the approximate guide has a vertical guide (9, 10) by means of which the current receiver unit (3) can be fitted to the current transmitter unit (1).

11. The connection apparatus as claimed in claim 10, characterized in that the vertical guide is provided with oblique guides in the form of conical depressions (10) or projections (9).

12. The connection apparatus as claimed in claim 11, characterized in that the oblique guides (9, 10) are provided with oversize play.

13. The connection apparatus as claimed in claim 12, characterized in that the play which is possible on the oblique guides (9, 10) is at least 1 mm, and is preferably 2 mm.

14. The connection apparatus as claimed in claim 10, characterized in that the approximate guide (9, 10) is provided with a bayonet fitting.

15. The connection apparatus as claimed in one of claims 3 to 14,

characterized in that the approximate guide (9, 10 or 11a, 11b respectively) is designed such that a latching connection is produced at the end of the mechanical insertion process.

16. The connection apparatus as claimed in claim 3, characterized in that the current transmitter unit (1) is provided with a magnet tray (12), which is provided with current supply contacts (16), with the magnet tray (12) being moveable in the direction of the current receiver unit (3) which is to be fitted, and with an electrical connection to the contact elements (2) being formed in the moved position.

17. The connection apparatus as claimed in claim 16, characterized in that the magnet tray (12) is provided with a restraining device (15).

18. The connection apparatus as claimed in claim 17, characterized in that the restraining device is provided with a magnet (15) or a material composed of a magnetic substance, which is arranged in the current transmitter unit (1) on the side facing away from the current receiver unit (3) which is to be fitted.